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PRACTICAL ESSAY

ON THE

MANAGEMENT of POTATOES;

OR,

A NEW METHOD

Of PREVENTING the DISORDER thereof,

CALLED

CURL'D TOPS,

CONTAINING

SHORT and PLAIN DIRECTIONS

FOR THE

RIGHT MANAGEMENT of POTATOES;

WITH RESPECT TO

Their Preservation, Setting, Time of Growth, Taking Up, &c.

Chiefly designed for the USE and BENEFIT of

FARMERS and COUNTRYMEN in General,

Being adapted to the Lowest Capacity.

TO WHICH IS ADDED,

An ACCOUNT of the ARTIFICIAL MANURE for POTATOES

With Respect to its Use, Effects, &c. &c.

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*AS this ESSAY is entered in STA-
TIONERS-HALL, any Person presuming
to print it will be prosecuted.*



P R E F A C E.

IN my *Treatise on the Management of Potatoes*; or, *A New Method of removing and preventing the Disorder thereof, called Cur'd Tops, and restoring them to their Primitive State and Perfection*, I have considered the nature, effects, various causes, and cure of the disorder; and have made remarks upon the usual management of Potatoes, in regard to setting, time of growth, taking up, putting into the pye, room, &c. and showed the various errors which are frequently committed in each particular, with proper directions therein to remove and prevent the disorder, &c. &c. so that nothing essentially necessary seems wanting therein, and, if strictly regarded, will infallibly answer the desired end: but as the greatest part is theoretical, or speculative, (chiefly designed for the use of Gardeners, and such as make this part of Nature their study) perhaps it may not be so useful to Farmers in general, and those who are less conversant in these matters, as could be wished. Therefore, for the use and benefit of such, I have avoided theory in the following Essay, wholly reduced it to practice, and made it easy to the lowest capacity; so it is hoped that all growers of Potatoes will be enabled to produce them in great perfection.

Although the directions which I have given (both in my former Treatise and in this Essay) are sufficient to cure the Curl'd-Top disorder of Potatoes, if properly attended to, yet I know by experience that, by the use of an Artificial Manure, adapted to the nature of Potatoes, the work may be completed in much less time.

It is not to be supposed that any kind of manure whatever will prevent the Potatoes from being Curl'd-Top, and restore them to a state of perfection, if at the same time all essential or necessary rules are disregarded, and only an erroneous method practised.

I should wish for every grower of Potatoes, who endeavours to follow the short directions which I have laid down in this Essay, to be assisted with the Artificial Manure, which soon would enable them to grow Potatoes in their greatest state of perfection; but as to those who are regardless of any regular method in their mode of management, I could rather wish that the Manure never were in their possession, for such persons would only tend to discredit it, instead of adding to its due merit. For this reason, every purchaser of the Artificial Manure may, at the time when they purchase it, have one of these Essays for sixpence, at any of the places where the Artificial Manure is sold; but to every non-purchaser the price is one shilling.

In this Essay I shall not consider either the nature, marks, effects, or various causes of the Curl'd-Top disorder of Potatoes; nor make any remarks upon the usual management thereof; nor point out the various errors which are frequently committed in each particular

cular (seeing this is already done in my former Treatise on this subject); but only lay down such short and plain directions as are absolutely necessary for the right management of Potatoes. To which I shall add an Appendix concerning the Artificial Manure for Potatoes, with respect to its use, effects, &c. &c.

Perhaps some may think I am too tedious, and even superfluous, in my directions, in the following work; but I think all, or most of them, are absolutely necessary to be observed when the Potatoes are intended for sets; but, when they are designed for common use only, (viz. eating) so strict a regard need not be paid to each particular; but then they must be kept apart from the others intended for sets; for though there may be no visible difference between them, yet if any particular neglect has been committed in the management, it may so sufficiently impair them as to lay a foundation for the disorder.

It is not necessary to strictly regard the directions when the Potatoes are intended for common use, but it is absolutely necessary when they are intended for sets.

Those persons have wrong conceptions who imagine that I want my directions to be observed in growing *all* the Potatoes designed for common use; for these they may manage in every respect as usual, or as is thought proper: I only lay down these directions for such persons as want Potatoes in perfection, chiefly for sets.

From a proper reflection then of the small quantity of Potatoes which are wanted for sets, when compared with those wanted for common use, the work will neither be so very tedious nor difficult as it appears.

The reason of my publishing this Essay at this time of the year, is, that as the Artificial Manure for Potatoes must be used at the period when they are put into the room, pye, or bed, to be preserved, it should be purchased before that season commences.

SHORT

SHORT and PLAIN DIRECTIONS
FOR THE
RIGHT MANAGEMENT
OF
POTATOES.

BEFORE I lay down such directions as are absolutely necessary to be observed in the management of Potatoes, I shall give a short account of a few things which are of less consequence, but yet necessary to be observed, viz.

1. Potatoes should not be exposed to frosty weather, nor too great a degree of either heat, dryness, or moisture, but kept in a temperate state as much as possible; for they are apt to be altered, in several respects, according to the degree of either cold, heat, dryness, or moisture they are for some time together exposed to: they should be preserved from bruises as much as possible, and whenever this accidentally happens, the wounded or bruised part ought to be cut off with a sharp knife.

2. If Potatoes are cut for sets, the oldest and largest of them should be chosen, (as shown in *Direction 12.*) and cut before they are put into the room, pye, or bed to be preserved; for if they are cut at setting-time, or but a little before, it will be productive of very bad consequences. The best method is to cut them a few days before they are put into the room, pye, &c.

I hope every thinking person will soon perceive the reasonableness of this practice, when they consider that at the time of the year when Potatoes should be put into the room, pye, &c. to be preserved, their juices are in a more fixed state than at the time of setting. Potatoes should not be cut into too little pieces; the largest should not be divided into above three or four parts at the most.

As to preserving Potatoes in rooms or pyes, it is most adviseable not to put too many of them together in one place, but rather separate them. Those Potatoes which seem to be detrimented must be kept out, lest they should tend to spoil or corrupt the rest.

DIRECTIONS to be observed in taking Potatoes up.

Direction 1. Potatoes intended for sets must not be taken up till their stems are entirely dead, and frosty weather (at this time) must be avoided as much as possible; therefore they should not be taken up too soon in the morning; nor too late in the evening, especially when the weather is inclinable to frost; neither must they be suffered to remain too long upon the ground

the open air, but put into a room to be preserved, till as many of them are taken up as are intended to be put into a pye, bed, &c.

Direction 2. Potatoes must not remain in the room above a week, or ten days at the most, (after taking up) before they are put into the pye, bed, &c. as I shall show in *Directions 3, 4, and 5*; neither must they be laid too many one upon another, because their own weight would be sufficient to bruise and do them hurt, as having no earth to support them.

DIRECTIONS to be observed in preserving Potatoes in rooms, pyes, beds, &c.

Direction 3. For preserving Potatoes in rooms.—First lay a little fine earth or sand upon the floor of the room; then lay Potatoes thereon to the height of about six inches; then cover them with earth or sand about three inches high (it should be made to go in between the Potatoes, so as to fill up the vacant places; this may be done with a stiffish broom, or some such thing); then lay more Potatoes as before, and cover them again with earth or sand other three inches high; then lay more Potatoes, &c. The above method of laying the earth or sand and Potatoes *stratum super stratum*, or layer upon layer, may be continued to the height of about six or seven feet, beginning and ending with earth or sand.

It will be better if the room have doors or openings above the Potatoes, to act as ventilators to let in fresh air; but they must be shut in very frosty weather.

DIRECTIONS

DIRECTIONS for preserving Potatoes in pyes.

Direction 4. First make a hole of a convenient size, in as dry a piece of earth as possible; put the Potatoes into it very gently, until it is filled about six inches high; then fill it about other six inches high with fine loose earth or sand, treading it gently down. This method of laying the Potatoes and earth layer upon layer, may be continued until the Potatoes are within about six inches of the earth's surface; then the hole is to be filled up with earth, which must be made tolerably solid by treading it down; then a covering of earth must be raised over the hole, the basis or bottom of which (just above the earth's surface) must be about two feet more in diameter than the top of the hole, which must be raised a little in its centre or middle, to make its apex, or top, a little convex or roundish.

The above methods of preserving Potatoes will do tolerably well; but a better method of preserving them is by putting them into what I call a bed, as I shall show in the following direction.

DIRECTIONS for preserving Potatoes in beds.

Direction 5. First make a hole in the earth as wide as you think proper, one foot and a half deep; let it be level at the bottom, and put as many Potatoes therein as will just cover the same, without laying one upon another; then cover them with fine loose earth or sand about three inches high (it should be made to go in between the Potatoes, as shown in *Direction 3*); then lay more Potatoes as before, and cover them again

again with earth or sand other three inches high; then lay more Potatoes, and fill up the hole or bed with earth or sand, treading it down, and cover it with earth about nine inches thick above the earth's surface. In very frosty weather a little straw, or some such thing, should be put upon the top of the pye and bed, but removed when the frost is over.

Note. If sand can be got, it is much better than earth, in several respects, for preserving Potatoes in either room, pye, or bed.

There is yet another method of preserving Potatoes which is preferable to those I have already mentioned (when the Artificial Manure is not intended to be used, but when it is, this method is rendered impracticable); I mean their not being taken up, but suffered to remain where they grew, until they are wanted for sets, which may be done as I shall show in the next *Direction*.

DIRECTIONS for preserving Potatoes in the natural earth as they grow.

Direction 6. Take up every other row of the Potatoes, trim up those that remain, (as I shall show in *Direction 19*) and bank them up with earth taken from between the rows. In very frosty weather the rows should be covered with a little straw, or some such thing, and if removed when the frost is over, so much the better; for it should be observed as a certain rule, that Potatoes cannot be kept too cold, provided they are only secured from the frost.

DIRECTIONS

DIRECTIONS to be observed in taking Potatoes out of the pye, &c.

Direction 7. When Potatoes are to be taken out of the pye, bed, &c. there must be a hole made in the earth, close by the side of the pye or bed, sufficiently wide for a person to go into, in order to take out the Potatoes, which hole must be made deeper as occasion may require. This method will prevent the Potatoes from being bruised by treading upon them, &c. but they should not be taken out in frosty weather.

Direction 8. If all the Potatoes are not taken out of the pye, bed, &c. at one time, the hole at which they are taken out must be well secured from the external air.

Direction 9. Potatoes must not be taken out of the pye, room, &c. too long before they are intended to be set; for a few days, especially if they are kept too warm and dry, removed from place to place, exposed to frost, &c. are sufficient to lay a foundation for the disorder.

DIRECTIONS to be observed in setting Potatoes.

Direction 10. When Potatoes cannot (by the *Directions* which I have given) be any longer prevented from sprouting, they must then be set: therefore about the beginning of April the pye, bed, &c. must be opened to examine them; and if they are beginning to vegetate, they must then be set without further delay, otherwise they will soon be greatly detrimented; but if there be not much appearance thereof, they may be kept

(7)
kept in the pye, bed, &c. a little longer, but they
had better be set soon than late.

Direction 11. Potatoes that are intended for sets
must be perfectly sound, and in full maturity: in this
respect as much care and exactness is required as is
chiefly observed in choosing grain for seed. Therefore
while they are growing a careful inspection is requisite,
and those plants which are any way disordered or
weak must either be taken up or marked, that they
may be known when their stems are dead, for they
must be kept apart from the other, as not being proper
for sets.

Direction 12. It is absolutely necessary that Pota-
toes intended for sets should be the largest that are
taken from each root, which can be done only at the
time when they are taken therefrom; for the largest
are in their perfect state of maturity, and the others
only in a state of ripening. This may be proved by
taking up a root of Potatoes while they are young,
(suppose about Midsummer) and perhaps there may
be four, five, or six Potatoes of a tolerable size, con-
sidering their age, with others that are very small,
some only just forming into Potatoes, which will fall
far short of the others at the time when their stems
are dead; yet they will appear at that time as old as
the others, though in fact they are not, and will fall
far short of their perfection in several respects; there-
fore they ought to be rejected for sets, notwithstanding
they are of a tolerable size, and the largest taken from
other roots, though less than those which were re-
jected.

Direction

Direction 13. Potatoes that are set together should be all of one kind, and set about five or six inches below the earth's surface; the rows three feet and a half, or four feet distant; the sets one foot and a half, or two feet from each other, and all of them with their sprout-ends upwards: if they be cut, the cut side should be put downwards.

Direction 14. Potatoes should not be manured with manure that is long, coarse, or dry; nor with such as is new, and only in part rotten; nor with lime or ashes of any kind; but with such manure as is old, being made of a mixture of the dung of cattle, straw, &c. having laid together for two years, or upwards, and is become perfectly rotten, and of a greasy nature. If manure cannot be got in so great perfection as that I have mentioned, that which nearest resembles it must be used.

Direction 15. Potatoes must not be planted above eight or ten years, at the most, after being raised from the seed; therefore, about that time, some seedling Potatoes, raised from sound and perfect seed, about two or three years old, must supply the place of the old sets.

Note, When the Artificial Manure for Potatoes is used, it will so invigorate and strengthen the Potatoes that there will be no necessity of having fresh sets. It is best to set Potatoes whole; but, if they are cut, it should be done as I have shewed in my observations at the beginning of this Essay.

DIRECTIONS

DIRECTIONS to be observed during the growth of Potatoes.

Direction 16. In the time of the growth of Potatoes, when they are expected first to appear above the earth's surface, (which will be in about twenty five or thirty days from the time of their being set) and may be perceived by their raising it up; if at this juncture it happen to be frosty weather, they must be lightly covered with a little loose earth to prevent it from hurting them; and when they are come up about six inches high, they must be banked as usual, kept clean from weeds, and care taken that nothing injure or hurt their stems.

Direction 17. When any weakly or disordered Plants of Potatoes appear, they must be taken up; they may be known by their stems being short and small, their leaves little and of a pale colour, &c. or if the frost has already hurt any of them, so that they appear a little curl'd, they must also be taken up: when their stems are about a foot high, they must have a little more earth put to them, and again cleared from weeds, &c.

Direction 18. If the Potatoes are of various kinds growing together, they should be separated: this may be known by the difference in colour, and form of the flowers and leaves; from the aspect of the whole Plants; and must be marked, that they may be known when they are taken up; for Potatoes that are intended for sets should never be of various kinds mixed together.

Direction 19. If the Potatoes are suffered to remain in the ground after their stems are dead, and begin to decay, and the weather begins to be frosty, the dead stalks

stalks must be taken away from them, and the holes which they leave filled up, or covered with earth, otherwise the cold frosty air will gain an entrance, and disorder some of the uppermost Potatoes. A stiffish broom, or some such thing, may be used to fill up the holes: but if the Potatoes are designed to remain untaken up for some time, they must be secured as I have shown in *Direction 6*.

Note. Potatoes designed for sets, should not be set, banked, or taken up with the plow, but with proper instruments, such as the spade, hoe, &c.

DIRECTIONS to be observed in collecting and preserving Potatoe fruit, or apples, for obtaining their seed, and raising Potatoes therefrom, &c.

Direction 20. The apples must be the largest, taken from such plants as are intended for sets; but as they must not be taken until the stems thereof are entirely dead, it often happens that there is frosty weather before that time, which vitiates or spoils them; therefore as soon as frost is expected, (which may be about the middle of October) the stems which have the apples upon them must be carefully bended down, and covered lightly with a little fine loose earth, until the stems are entirely dead, at which time the apples must be taken from the plants, and put into a box, or some such thing, as shown in the next *Direction*.

Direction 21. First fill a box with fine earth or sand, four inches high, (making it tolerably solid by pressing it down) and lay as many apples thereon as will lay without placing one upon another; then fill the box, about

about four inches more with earth or sand, and then put more apples thereon as before; and thus continue to lay the earth and apples layer upon layer, until the box is filled, beginning and ending with earth or sand.

Note. If the earth, or sand, and apples are prepared with the Artificial Manure, as directed in the Appendix, at the time of putting them into the box, it will greatly invigorate or strengthen the nature of the seeds, and thereby cause them to produce plants in greater perfection than they would otherwise do.

Direction 22. When the box is filled agreeable to the methods already recommended, it must be buried in the earth, to secure it from the frost, where it must remain until about the beginning of April, at which time it must be taken up, and the earth, or sand, and seeds mixed well together, and sown upon a bed of fine rich earth, and covered about three inches thick with the same.

Direction 23. To know how deep the seeds are covered, several pieces of sticks may be put with one of their ends into the bed, in several parts thereof, and the other ends about three inches above its surface. When the seeds are thus sown, and covered with earth, if the weather is frosty, especially in the night-time, the bed must be covered with sail cloth, painted cloth, or some such thing; but it must be taken off in the day-time, when the weather is not frosty.

Direction 24. When the young plants begin to appear above the earth, the covering must be raised a

little from the surface of the bed by some stakes, to prevent it from pressing upon them; but the edges of the covering should hang down so as to reach the earth, to prevent the frost air from getting under it. In very wet weather, one side of the covering must be raised a little higher than the other, to cast off the water from the bed.

Direction 25. The plants must be repeatedly thinned; and only some of the strongest of them left, about nine inches one from the other: those plants that were taken out may be planted on other beds of fine rich earth, about the same distance from each other.

Direction 26. The young seedling Potatoes must not be taken up before their stems are entirely dead; and as there is frequently frosty weather before that time, they must be preserved therefrom by throwing a little fine loose earth among them, and covering them as already directed. They must afterwards be treated in every respect as other Potatoes intended for sets. They will be fit for sets the second or third year after they are sown: the largest of them must be taken, rejecting the smallest for reasons given in *Direction 12*.

Note. In raising Potatoes from seeds, they frequently are of different kinds, which may be known by *Direction 18*; and as they will differ from each other in several respects, (some being of a more hardy nature, others vegetating sooner, &c.) they ought to be carefully separated.

If any person should think these *Directions* which I have given for raising Potatoes from seeds are too tedious, they may raise them in a more careless manner, which perhaps sometimes may answer tolerably well, and may prove an encouragement to more industry.

AN APPENDIX

ARTIFICIAL MANURE

ANALYSIS OF B²

ARTIFICIAL MANURE is a new invention; and has not as yet been in the hands of many persons, because it would be a difficult task to convey the points in general of its utility, and the experience required in it; but I can assure them from repeated experiments that it has surprising effects upon Potatoes; for it not only prevents them from being Cured, but improves and restores them to great perfection.

It is certain (as I hinted in my Treatise on the Manner of Potatoes) that the earth, in its natural state, contains various kinds of salts, sulphurs, &c. and that each kind of plant, when in a state of perfection, as likewise certain more or less of each of these substances, &c. But some kinds of plants are more delicate, or do contain more of one kind than another, which they necessarily require for their nourishment; therefore different kinds of plants

A N A P P E N D I X

CONCERNING THE

ARTIFICIAL MANURE

FOR

P O T A T O E S.

AS this ARTIFICIAL MANURE is a New Invention, and has not as yet been in the hands of many persons, perhaps it would be a difficult task to convince the public in general of its utility; until future experience confirm it; but I can assure them from repeated experiments that it has surprising effects upon Potatoes; for it not only prevents them from being Curl'd Topt, but improves and restores them to great perfection.

It is certain (as I hinted in my *Treatise on the Management of Potatoes*;) that the earth, in its natural state, contains various kinds of salts, sulphurs, bituminous substances, &c. and that each kind of plants, when in a state of perfection, do likewise contain more or less of each of these substances, &c. But some kinds of plants are more replete, or do contain more of one kind than another, which they naturally attract for their nourishment; therefore different kinds of
plants

plants require different kinds of substances to nourish and support them in any degree of perfection. To this end I have adapted the Artificial Manure to the nature of Potatoes, so that in these respects it will be found to supply the defects of Nature, as being a proper succedaneum in the stead of that which is wanting.

To show the utility of the Artificial Manure, I shall only give an instance of one experiment, viz. About the 10th of July last, I took up a plant of a rank Curl'd Potatoe, (after it had made its appearance above the earth for some time) broke off the stems, and kept the Potatoe and moistened it once every day with a solution or liquor made of the Artificial Manure, for the space of about three weeks, after which I set it in natural earth without any other manure, and it produced a fine healthy plant, entirely free from the Curl'd Toot disorder. This, and several other similar cases of the utility of this Manure, I have showed to several persons, who are witnesses to the truth thereof.

I do not give the above instance for a rule to be put into practice, but only to set forth the surprising effects that this Manure hath upon the worst of Potatoes; from which it is easy to infer what will be the effects thereof when applied to those that are in a tolerable sound state.

DIRECTIONS for using the Artificial Manure for Potatoes.

Direction 27. Each pound of the Manure is to be put into about four gallons of water, and stirred about until it dissolve, which it will do very soon.

Direction

Direction 26. When you put the Potatoes into the room, pye, or bed, (as I have showed in *Directions 3, 4, and 5,* of the Essay) each Layer of Potatoes are to be well wet with the above liquor, before the earth or sand is put upon them, which may be done with a watering-pan, such as is used in watering gardens, or with any other convenient utensil. The liquor must be well stirred about before it is used.

Direction 27. Each pound of the Manure, with four gallons of water, is sufficient for about ten pecks of Potatoes, and so on in proportion, always allowing one pound of Manure for every ten pecks of Potatoes.

Note. The last layer of earth or sand that covers the uppermost layer of Potatoes must be very well moistened with the liquor.

I have tried several methods of using this Manure, but that which I have directed seems to be preferable to any other; but those who choose to adopt a different method in using it, may do as they think proper, only I would caution them not to steep the Potatoes in the liquor; because if they do (for any time together) the vegetative property will be entirely destroyed.

The quantity of water already specified for dissolving the Manure, answers very well in general. But as the earth or sand that the Potatoes are preserved in may be very different in its nature, dryness, &c. it will make a difference in the quantity of water which ought to be used; for it must be observed, that the earth or sand that the Potatoes are preserved in must only

only be made tolerably moist, and not so wet as to become like puddle, or the liquor to swim about amongst them; therefore earth that is moist, and abounds with clay, or is of a strong and close nature, will require less water than such as is dry, mossy, loose, or open.

If the above quantity of manure is used, the proportion of water for dissolving it is not very material, so as the earth or sand is only made tolerably moist. Care must be taken not to use too much water, for if the earth is made extravagantly wet, and the place where the pye or bed is made be of so moist a nature that it cannot take in the superfluous moisture, it will act, in some degree, as though the Potatoes were steeped.

Note. It is needless to apply this Manure to any Potatoes but such as are intended for sale.

I am certain that if these short *Directions* which I have given in the Essay are put into practice, they will in a few years infallibly cure the worst rank Curl'd Potatoes, and preserve them in great perfection, especially if the Artificial Manure is used: But I hope no person will be so unreasonable as to expect that either the Directions in the Essay, or Manure, or both of them together, will restore rank Curl'd Potatoes to a state of perfection in the space of one year. Those who choose to try the experiment with such Potatoes, will find them greatly improved the first year; much more so the next year; and in a year or two more they will be wholly restored to the greatest state of perfection. But such-like experiments as these are not (as I hinted before)

fore) intended for practice; therefore those persons who are desirous of curing the disorder as soon as possible, and of having Potatoes in perfection the next year, must make use of such as are in a tolerable degree of soundness, and then if the Artificial Manure is used there need be no doubt of the desired effect.

The Artificial Manure for Potatoes is prepared ONLY by the Author; and by his appointment sold by Mess. Wright and Prest, Mr. Tesseyma, and Mr. Spence, York; Mr. Locke and Mr. Grainger, Howden; Mr. Browne, Hull; Mr. Crosby, Pocklington; Mr. Hudson, Market-Weighton; and by the Author in Barmby.

* * * The Artificial Manure is put up in small parcels of one pound each, price one shilling and fourpence, and labelled with the following words—*Raley's Artificial Manure for Potatoes, 1 Pound, Price 1s. 4d.* in his own hand-writing.

§§ The price of the Essay is one shilling; but each purchaser of the Artificial Manure for Potatoes may (at the time when they purchase) have one of them for sixpence, at any of the places where the Manure is sold.

§ A few of my former Treatises on the Management of Potatoes, &c. may yet be had of Mr. W. Tesseyma, and Mr. R. Spence, booksellers in York; to which is now added, gratis, An APPENDIX, containing an account of the Artificial Manure for Potatoes, with respect to its use, effects, &c. &c.

BARMBY, OCT. 4, 1782.



